

Appln. No. 09/840,193  
Amendment dated December 29, 2004  
Reply to Office Action of October 4, 2004

REMARKS/ARGUMENTS

Reconsideration of the present application, as amended, is respectfully requested.

The October 4, 2004 Office Action and the Examiner's comments have been carefully considered. In response, claims are cancelled and amended, and remarks are set forth below in a sincere effort to place the present application in form for allowance. The amendments are supported by the application as originally filed. Therefore, no new matter is added.

CLAIM OBJECTIONS

In the Office Action claims 1 and 30 are objected to because of an informality. In response, claim 30 is cancelled and claim 1 is amended in a sincere effort to overcome the Examiner's objection. In view of the cancellation of claim 30 and the amendment of claim 1, reconsideration and withdrawal of the objection to claims 1 and 30 are respectfully requested.

REJECTION UNDER 35 USC 112, SECOND PARAGRAPH

In the Office Action claims 1-10 and 30 are rejected under the second paragraph of 35 USC 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In

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response, the claims are amended in a sincere effort to address each of the points raised by the Examiner and to overcome the indefiniteness rejection. In view of the amendment of the claims, reconsideration and withdrawal of the rejection of claims 1-10 and 30 under the second paragraph of 35 USC 112 are respectfully requested.

PRIOR ART REJECTIONS

In the Office Action claims 1, 2, 8 and 30 are rejected under 35 USC 102(b) as being anticipated by USP 5,732,149 (Kido et al.). Claims 6 and 7 are rejected under 35 USC 103 as being unpatentable over Kido et al., and further in view of USP 6,493,458 (Yasui et al.). Claims 3-5 and 10 are rejected under 35 USC 103 as being unpatentable over Kido et al. and further in view of USP 6,335,980 (Armato, III et al.). Claim 9 is rejected under 35 USC 103 as being unpatentable over Kido et al. and further in view of USP 6,594,380 (Shinbata).

In response, claim 1 is amended to more clearly define the present claimed invention over the cited references.

The present claimed invention as defined by independent claim 1 is directed to a radiation image processing apparatus including an object region extracting section and a contour recognizing section. The object region extracting section

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detects an amount of radiation energy transmitted through an object representing a body part, forms radiation data including radiation image data of the object and extracts an object region corresponding to the radiation image data of the object from the radiation data. The contour recognizing section recognizes a contour of a body part of the object based on the object region extracted by the object region extracting section. The contour recognizing section has data of classifying judgment criteria for each of plural different kinds of predetermined contours, judges the kind of recognized contour to belong with one of plural different kinds of contours on the basis of the classifying judgment criteria and provides a feature amount regarding the kind of recognized contour in accordance with the judgment results.

As recited in amended claim 1, a radiation image processing apparatus includes an object region extracting section and a contour recognizing section. The object region extracting section extracts an object region corresponding to the radiation image data of the object from the radiation data (see Figs. 3(a) to 3(d) of the present application). The contour recognizing section has data of classifying judgment criteria for each of plural different kinds of predetermined contours (see Figs. 4(a), 4(b), 5, 6(a) to 6(d), and 7(a) to 7(d) and page 63, line 4 of

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the present application). Then, the contour recognizing section judges the kind of recognized contour to which one of the plural different kinds of contours belongs on the basis of the classifying judgment criteria and provides a feature amount regarding the kind of recognized contour in accordance with the judgment result (see page 66, line 3 of the present application).

As a result, the radiation image processing apparatus of the present invention specifies the kind of body part of the object on the basis of the feature amount.

In the Office Action the Examiner asserts, based on the disclosure at column 13, lines 6-23 that Kido et al. disclose a contour recognizing means which extracts a contour based on the extracted object region.

However, in the above-identified portion of Kido et al., Kido et al. merely teach producing a characteristic value of a dispersion, the standard deviation value and a difference between the maximum and minimum value with regard to 4x4 pixel data (optical density level) in order to determine the boundary line (see column 13, line 22 of Kido et al.).

Therefore, the characteristic value of Kido et al. has nothing to do with a feature amount of the present invention regarding the kind of contour of an object.

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As a matter of fact, as can be seen from the Abstract of Kido et al., Kido et al. merely teach an irradiation field region extracting apparatus. Kido et al. do not disclose, teach or suggest classifying judgment criteria for each of plural different kinds of predetermined contours, nor do Kido et al. teach structure which judges the kind of recognized contour to which one of plural different kinds of contours belongs on the basis of the classifying judgment criteria.

That is, the present claimed invention as defined by amended claim 1 is patentable over Kido et al. because the reference does not disclose, teach or suggest:

an object region extracting section that detects an amount of radiation energy transmitted through an object representing a body part, forms radiation data including radiation image data of the object and extracts an object region corresponding to the radiation image data of the object from the radiation data; and/or

a contour recognizing section that recognizes a contour of the body part of the object based on the object region extracted by the object region extracting section, wherein the contour recognizing section has data of classifying judgment criteria for each of plural different kinds of predetermined contours, judges the kind of the recognized contour to which one of the plural different kinds of contours belongs on the basis of the classifying judgment criteria, and provides a feature amount regarding the kind of the recognized contour in accordance with the judgment result (see claim 1, lines 3-19).

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None of the other references of record close the gap between the present claimed invention as defined by amended claim 1 and Kido et al.

Claims 2-9 are either directly or indirectly dependent on claim 1 and are patentable over the cited references in view of their dependence on claim 1 and because the references do not disclose, teach or suggest each of the limitations set forth in claims 2-9.

In view of the foregoing, claims 1-9 are in form for immediate allowance, which action is earnestly solicited.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner disagrees with any of the foregoing, the Examiner is respectfully requested to point out where there is support for a contrary view.

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If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

  
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